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Organisation de Coopération et de Développement Economiques
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Or. Eng.

NUCLEAR ENERGY AGENCY
STEERING COMMITTEE FOR NUCLEAR ENERGY
NUCLEAR SCIENCE COMMITTEE

PARIS

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MEETING ON BURNUP CREDIT CRITICALITY BENCHMARKS

Summary of Meeting

held at OECD, Château de la Muette, Paris
from 11 to 13 July 1994

A few numbers have been erroneously omitted from official document NEA/NSC/DOC(95)15. They are shown in bold in this document.

Please accept our apologies for the inconvenience caused.

Or. Eng.

Document complet disponible sur OLIS dans son format d'origine
Complete document available on OLIS in its original format

Annex 2

Additional Data Requested for Problem IB (12 July 1994)

The following data for each nuclide listed at the bottom of this note should be provided:

1. $t_{1/2}$, half life
2. branching fractions for decay modes
3. direct fission yield (as a fraction)
4. cumulative fission yield (as a fraction)
5. thermal microscopic cross section
6. resonance integral
7. One group cross section collapsed with spectrum from Problem IA (3.6 wt%, 30 GWd/MTU, 5 year cooled, with fission products) (to be extracted from the working library, not the basic evaluation)

Nuclide list:

Fission products: Ag-109, Pd-109, Cs-135, Xe-135, Cs-135m, Pm-149, Sm-149, Pm-151, Sm-151,
Sm-153, Eu-153, Eu-155, Gd-155

Actinides: U-236, U-237, Np-237, Np-238, Pu-238, Am-241, Cm-242, Pu-243, Am-243, Bk-247

Note: *Poor agreement has been observed for the underlined nuclides*

This information is required for clarifying existing discrepancies and should be provided by end of October 1994.

Annex 3

Agreed Modifications of Problem IIB (12 July 1994)

- I. Use geometry and materials as specified in letter from Mark de Hart (ORNL) to Makoto Takano (JAERI) (19 May 1994). This letter was attached to the meeting announcement of 22 June 1994.
- II. The following five (5) cases will be calculated:
 - A. 4.5 initial weight percent (wt%) U-235
30 GWd/MTU
5 years cooled
no axial distribution
 - B. Case A with axial distribution
 - C. 4.5 wt% U-235
50 GWd/MTU
5 years cooled
no axial distribution
 - D. Case C with axial distribution
 - E. 4.5 wt% U-235
fresh fuel

> use the same isotopic compositions as in Problem IIA
- III. Multi zone (axially distributed) models will be as in IIA – reflected about mid-plane. A normalised profile for the full length profile was promised but never materialised.
- IV. Calculations: Provide K_{eff} by 18 November 1994

The data had originally to be collected by Mikey Brady.

Because of change of functions of several key participants involved the following changes are proposed:

1. K_{eff} for all cases, together with general information on the assumptions made in the calculation should be provided as in IIA:
 - a) File Header (date, institute, participants),

- b) Analysis Environment (neutron data library identification, number of neutron energy groups, code system used, geometry modelling, statistical errors and other assumptions, simplifications and deviations from the specifications),
 - c) Dennis Mennerdahl has proposed additional cases for "axial effects" (letter to Members of 28 November 1994).
Calculation of these other cases are encouraged and should be discussed at the next meeting.
2. This information should be sent to E. Sartori by 31 August 1995 via e-mail or on MSDOS diskette, who will summarise the results in tabular and graphical form.